

## CLAIMS

We claim:

1. A method of identifying a connection between a first data entity and a second data entity, said method comprising:
  - connecting said first data entity with said second data entity;
  - creating a pseudo-unique identification code for said connection; and
  - storing said pseudo-unique identification information.
2. The method of claim 1 wherein said pseudo-unique identification information comprises a string that is pseudo-randomly generated.
3. The method of claim 1 wherein said storing step occurs on both said first data entity and said second data entity.
4. The method of claim 1 further comprising:
  - storing diagnostic data such that said diagnostic data is associated with said pseudo-unique identification information.
5. The method of claim 1 wherein said first data entity comprises a first modem and said second data entity comprises a second modem.
6. A method of communicating between a first modem and a second modem comprising:
  - opening a primary data channel between said first modem and said second modem; and

transmitting diagnostic/maintenance data on a secondary logic channel.

7. The method of claim 6 further comprising:

determining the capabilities of said first modem and said second modem before said transmitting step; and

optimizing said secondary logic channel based on said determining step.

8. The method of claim 6 wherein said transmitting step comprises placing a value of 0x10 in the UI\_TYPE field of an Unnumbered Information frame and placing said diagnostic/maintenance data in the UI\_INFO field of the Unnumbered Information frame.

9. The method of claim 8 wherein the UI\_INFO field comprises information in one or more of the following categories: FINAL\_FRAME; SEQ\_NUM; FRAME\_TYPE; DIAG\_CODE; and DIAG\_INFO.

10. The method of claim 6 further comprising:

sending a request from said first modem to said second modem via said secondary logic channel; and

transmitting data in response to said request from said second modem to said first modem via said secondary logic channel.

11. A method of using a secondary communications channel between a first modem and a second modem comprising:

sending diagnostic information on said secondary communications channel.

12. The method of claim 11 wherein said diagnostic information includes at least one piece of information concerning one or more devices connected to said secondary communications channel.

13. The method of claim 11 wherein said diagnostic information is categorized into a category selected from group consisting of Monitor, Control, Configuration, and Unsolicited.

14. The method of claim 11 wherein said diagnostic information includes pseudo-unique identification information regarding a particular connection.

15. A method of using a secondary communications channel between a first modem and a second modem comprising:

indicating that diagnostic information will be in a certain format; and

sending said diagnostic/maintenance information on said secondary communications channel; wherein,

said diagnostic/maintenance information contains information in a plurality of different areas.

16. The method of claim 16 wherein said diagnostic/maintenance information further comprises pseudo-unique identification information.

17. The method of claim 16 wherein said diagnostic/maintenance information further comprises information regarding the quality of the connection between said first modem and said second modem.

18. The method of claim 16 said diagnostic information is interlaced with indications of the area of said information.

19. A method of using call identification information comprising:

establishing a connection between a first modem and a second modem;

sending call identification information for a previous connection from said first modem to said second modem; and

matching said call identification information with information stored by said second modem.

20. The method of claim 19 wherein said sending step is performed through the use of a secondary data channel.

21. The method of claim 19 further comprising:

comparing said call identification with information regarding a different connection.

22. The method of claim 19 wherein said different connection comprises a current connection between said first modem and said second modem.

23. The method of claim 19 wherein said call identification information comprises  
pseudo-unique call identification information; and  
diagnostic data associated with the connection between said first modem and said second  
modem.

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